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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JAN 31 2003

REPLY TO THE ATTENTION OF
SE-5J

ACTION MEMORANDUM

DATE:

SUBJECT: ACTION MEMORANDUM - Request for an Emergency Removal Action at the Roberto Clemente High School Mercury Spill And OU 1, North Fairfield Residence Site, Chicago, Cook County, IL (Site ID# B55H)

FROM: Verneta Simon, On-Scene Coordinator Verneta Simon
Emergency Response Branch - Response Section III

TO: Margeret Guerrero, Acting Chief
Emergency and Enforcement Response Branch

THRU: Linda Nachowicz, Chief
Response Section III

I. PURPOSE

The purpose of this Action Memo is to document the verbal authorization received on November 19, 2002, from Beverly Kush, Acting Chief, Emergency Response Branch (ERB) to expend up to $25,000 for clean-up contractor costs at the Roberto Clemente High School (Clemente) and the North Fairfield Residence (NFR). The scope of this emergency action was to mitigate threats to human health and the environment posed by the presence of metallic mercury and its vapor that had earlier spilled at Clemente and then was later traced to an apartment on North Fairfield. The proposed actions were taken pursuant to Section 104 (a)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended. Actions taken at Clemente related to U.S. EPA oversight of actions taken by the contractors for the Chicago Public Schools (CPS) to address the mercury spill at the high school. At the NFR, U.S. EPA responded by locating, recovering, and decontaminating metallic mercury released in one apartment on the west side of Chicago. Off-site disposal of the mercury and mercury-contaminated media (clothing, furniture, etc.) was also completed. These removal actions took eight on-site working days to complete; two at Clemente and six at the NFR site.

The site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# ILN 000 508 652

A. Physical Location

Roberto Clemente High School is located at 1147 N. Western Avenue in Chicago, Cook County, Illinois. The release of metallic mercury occurred on the seventh floor of the building; decontamination activities also occurred on the third floor. Geographical coordinates for Clemente were latitude 41° 54' 08" north and longitude 87° 41' 11" west. The NFR site consisted of the rear garden apartment in a 6-unit apartment building at North Fairfield Street, Chicago, Cook County, Illinois. This apartment building was in a residential area on the west side of Chicago. Geographical coordinates for the building were latitude 41° 54' 43" north and longitude 87° 42' 36" west.

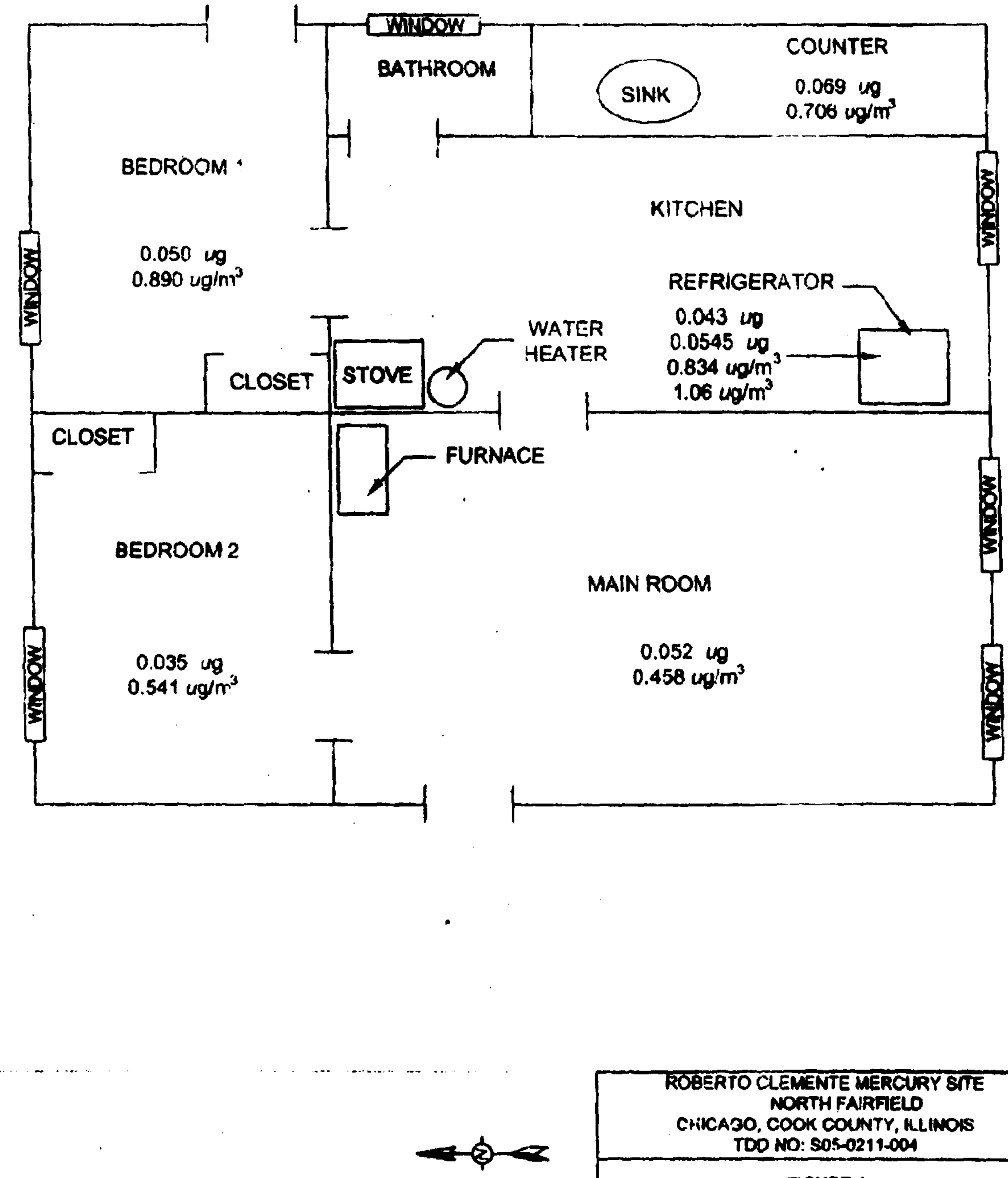
According to the attached environmental justice analysis (Attachment 3), Clemente is in census tract # 2424, block group #1. Demographics in this census group were 18% low income and 15.5% minority. Residents closest to the North Fairfield Street apartment live in census tract # 2407, block group #2. Demographics for residents in this census block group were 66% low income and 65% minority. Percentages in the State of Illinois both low income and minority were 27% and 25%, respectively. Therefore, Clemente is not an environmental justice community since the percentages were less than Illinois's percentages for low income and minority and the NFR site is in a high priority environmental justice community since the percentages were more than twice the Illinois percentage or 54% for low income and 50% for minority.

B. Site Description and Background

Clemente, located at 1147 N. Western Avenue in Chicago, is part of the Chicago Public School system. This high school is 345,000 square feet consisting of eight floors, 3 stairwells and escalators. Clemente enrolls approximately 2, 200 students and employs 152 faculty.

The NFR site was a 4-room apartment on the west side of Chicago (See Figure 1). A family of three, one adult and two teenagers, occupied this apartment.

On November 15, 2002, the Chicago Department of Environment requested assistance from U.S. EPA in responding to a mercury spill at Clemente, which occurred on the 7th floor in Room 717. According to school officials and faculty, at 8:30 a.m. on November 15, 2002, a substitute teacher noticed approximately six students in room 717 of the school playing with what appeared to be mercury. After a permanent staff member was informed, the students were sent to the school clinic and the staff member attempted to clean up the mercury on her own. The school



NOT TO SCALE

ROBERTO CLEMENTE MERCURY SITE
NORTH FAIRFIELD
CHICAGO, COOK COUNTY, ILLINOIS
TDD NO: S05-0211-004

FIGURE 1
MERCURY SAMPLE RESULTS

Tetra Tech EM Inc.

principal was informed of the situation by school staff at approximately 9:55 a.m. and immediately notified school system officials and emergency personnel. The students directly involved with the mercury spill were sent to rooms 305 and 307 of the school and isolated. At approximately 10:45 a.m. Chicago Public School System (CPS) contractors and the Chicago Fire Department arrived at Roberto Clemente High School, they began taking air monitoring readings on the 7th floor. Based on air monitoring results, it was recommended that students in the exposed area be separated and the other students remain in their respective classrooms. At approximately 12:00 p.m. students from the 7th floor were evacuated to the auditorium on the 1st floor of the building. CPS contractors began screening students located in room 305 with a VM 3000 instrument for the presence of mercury. Students whose readings exceeded 0.5 $\mu g/m^3$ on there hands and shoes were decontaminated. Decontamination for all students took place in the mens bathroom across the hall from room 305. After decontamination the students were sent to room 301 to wait until CPS gave authorization for the students to be released. A total of 32 students and 1 faculty member were taken to area hospitals for treatment. It was later determined that the mercury was brought to the school by students in a 35mm film container and a lip stick container.

At approximately 2:30 p.m., the Chicago Department of the Environment (CDOE) requested assistance from the U.S. EPA. The U.S. EPA, ATSDR, and the Superfund Technical Assessment and Response Team (START) arrived at Clemente at approximately 3:30 p.m. U.S. EPA, ATSDR, and START screened the school for the presence of mercury vapors using a Lumex, which can detect mercury vapors down to 1 nanograms per cubic meter ($ng/m^{3)}$. ATSDR set the clean-up goal for Clemente, which was 1 microgram per cubic meter ($\mu g/m^3$). Lumex readings indicated three areas on the 7th floor needed remediation. The highest Lumex reading on the 7th floor was 4.0 $\mu g/m^3$, and this was taken from the bottom of the closed door of Room 717. Lumex readings were also elevated in portions of the 4th floor and in a classroom on the 3rd floor. Later it was confirmed with school administrators that prior to class, students met in the 4th floor cafeteria for breakfast. While mercury levels on the 4th floor were above normal background levels, they were later determined to be below $1\mu g/m^3$. Two personal items were found in room 305 on the 3rd floor with levels of mercury exceeding the action level.

Students and faculty began leaving Clemente at 4:40 p.m. Starting at 1900 hours, the CPS contractors Carnow, Conibear and Associates(CCA) and GSG Environmental Inc.(GSG) began to characterize every floor in the building. CCA contractors used a Lumex on the 7th and 8th floors. GSG used a Jerome Mercury Vapor Analyzer (Jerome), which can detect mercury vapors down to 3 $\mu g/m^3$, on floors 1 through 6. USEPA and START checked the stairwells and escalators on every floor with a Lumex to confirm that the mercury problems were confined to the 7th and possibly the 4th floor. Because students on the 7th floor were evacuated to the auditorium, the auditorium was screened for mercury vapors as a precaution. The highest readings surveyed in the auditorium were $0.005\mu g/m^3$.

After the 7th floor was characterized for the presence of mercury vapors, RES Environmental Services, the CPS cleanup subcontractor decontaminated the area. Three areas on the 7th floor

were decontaminated: 1) Room 717 where the spill occurred, 2) the hallway on the east end of the 7th floor where mercury vapors as high as 2 $\mu g/m^3$ were detected, and 3) Room 706 where the teacher who attempted the clean up of the spill had visited and elevated levels of mercury vapor were detected.

Clean up of the hallway was conducted using Hg-X mercury vapor absorber to scrub the hallway floors. The two rooms were cleaned by first scrubbing the furniture with Hg-X, removing it from the room, and then removed the carpeting in each room. Carpeting was sealed in plastic bags and disposed of in 55-gallon drums. After carpeting was removed, the floor of the room was scrubbed with Hg-X and the furniture was returned to the room. After decontamination of the rooms was complete, the rooms were ventilated using negative air pressure blowers to remove any residual airborne vapors from the rooms. On November 16, 2002, U.S. EPA, START, and RES surveyed 7th floor areas that RES had decontaminated using a Lumex. Readings in hallway were below the action level of 1 $\mu g/m^3$. Then, CCA placed 8 confirmation Gillian pumps in various locations on the 7th floor and in the school lobby. Results from the Gillian pumps are not available because the sample tubes were damaged in shipment to the laboratory.

Several book bags located in room 305 belonging to students directly involved with the mercury spill were surveyed with a Lumex. The readings of the book bags were 5.6 $\mu g/m^3$ and 2.4 $\mu g/m^3$. These book bags were then inventoried by CCA and properly disposed of by RES in a 55-gal drum.

After learning more of the spill chronology on November 15th it was determined that the Clemente High School recreational building should be surveyed. This was a precautionary measure in case of contamination reaching the building, which is a two story structure containing the gym and pool located across Division Street from the main school building. The recreational building is connected to the main building by an elevated walkway. The highest readings taken from the gym were in the south stair well at 0.045 $\mu g/m^3$.

In summary, ten 55-gallon drums of mercury-contaminated waste was generated at Clemente that was disposed of by CPS. The concert scheduled in the auditorium for November 16, 2002 went on as planned and classes resumed as normal on November 18, 2002. On November 18, 2002, CPS offered urine sampling for students and faculty to check for mercury. Results were 4 positive findings for mercury out of 180 samples submitted.

Eventually, it was determined that the mercury at the high school came from a blood pressure gauge opened at North Fairfield. On November 19, 2002, U.S. EPA was able to enter the rear apartment using a Lumex Multi-functional Mercury Analyzer (Lumex). The highest Lumex reading in the apartment was 49 micrograms per cubic meter ($\mu g/m^3$). In addition, there was visible metallic mercury present in the apartment. The Agency for Toxic Substances and Disease Registry (ATSDR) recommended the indoor level for mercury vapor should not exceed 1 $\mu g/m^3$.

D. Other actions to date

The cleanup activities described in this Action Memorandum were discussed with Dr. Mark Johnson of the Agency for Toxic Substances and Disease Registry and Mr. Pete Badillo, Chicago Department of the Environment.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at Clemente and the NFR site presented a threat to public health, welfare, and the environment based upon factors set forth in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR § 300.415 (b)(2). These factors included:

a) actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants;

This factor was present at the apartment due to the presence of metallic mercury and its vapor above the ATSDR recommendation of 1 $\mu g/m^3$. The highest mercury vapor reading at Clemente was 4 $\mu g/m^3$; in the apartment, the highest reading was 49 $\mu g/m^3$. Mercury decontamination activities were necessary on two floors of Clemente, the seventh and third floors. In addition, mercury was visible on the floor in the apartment. Urine samples for the family were highly elevated and the individuals required medical intervention.

Mercury poses a toxic threat through inhalation, ingestion and direct contact which can result in severe nausea, vomiting, abdominal pain, bloody diarrhea, kidney and liver damage, and death. Metallic mercury is highly toxic when inhaled and attacks the central nervous system by destroying neurons.

Mercury is a listed hazardous waste under RCRA, and 40 CFR § 261.33, and exhibits the characteristic of toxicity under 40 CFR § 261.24, and is a hazardous substance under section 101(14) of CERCLA.

IV. ENDANGERMENT DETERMINATION

At both Clemente and the apartment , the presence of metallic mercury and its vapor, posed serious threats to human health and the environment through direct contact, ingestion, and inhalation. Mercury is a listed waste under 40 CFR § 261.33, and exhibits the characteristic of toxicity under 40 CFR § 261.24, and is a hazardous substance under section 101(14) of CERCLA.

At Clemente, U.S. EPA's oversight activities assured that the actual release of mercury was properly addressed, minimizing the exposure of teachers and students. At the NFR site, the

actual release of these hazardous substances, if not addressed by implementing the response action described in this Action Memorandum, would have prolonged the exposure of the family to mercury and mercury vapor and could have resulted in additional households or persons being affected.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The purpose of this removal action was to mitigate the threats posed to public health, welfare, and the environment by the presence of metallic mercury and mercury vapor at Clemente and the residence. Activities at Clemente were mostly on-scene monitoring and providing technical direction since the Chicago Public School System had hired three contractors to address the release. Activities at the residence included: recovery of all metallic mercury from inside the apartment; identification and removal of contaminated media (clothing, furniture, etc.); temporary relocation of the family; decontamination of affected building floors and walls; off-site disposal of all characterized wastes identified and generated during removal activities pursuant to the U.S. EPA Off-Site Rule; and air samples to verify the apartment had reached acceptable levels (Figure 1).

U.S. EPA and the Superfund Technical Assessment and Response Team (START) spent two on-site working days at Clemente. The apartment took six on-site working days to complete and involved U.S. EPA, START, and the emergency response contractor. The threat posed by the presence of metallic mercury and mercury vapor met the criteria listed in §300.415(b)(2) of the NCP and are consistent with any long-term remedial action which may be required.
The OSC planned for the provision of post-removal site control, consistent with the provisions of § 300.415(k) of the NCP. The nature of this removal eliminated the need for post-removal site control.

The detailed cleanup contractor costs are presented in Attachment 1 and estimated project costs are summarized below:

EXTRAMURAL COSTS

Cleanup Contractor	$ 25,000
Contingency (0%)	-0-
START	9,100
Extramural Subtotal	$ 34,100
Extramural Contingency (0%)	-0-
TOTAL, EXTRAMURAL COSTS:	$ 34,100

INTRAMURAL COSTS:

U.S. EPA Direct Costs $30/hr x (80 Regional + 8 HQ hrs)	$ 2,640
U.S. EPA Indirect Costs $61/hr x (80 Regional hrs)	4,880
TOTAL, INTRAMURAL COSTS	$ 7,520
TOTAL REMOVAL PROJECT CEILING ESTIMATE	$ 41,620

The response actions described in this Memorandum directly addressed actual or threatened releases of hazardous substances, pollutants, or contaminants at Clemente and at the NFR site which posed direct contact, ingestion, and inhalation threats to public health and safety and to the environment. These response actions did not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable, relevant, and appropriate requirements (ARARS) were complied with to the extent practicable. Federal ARARS for this site included RCRA.

VI. CHANGE IN THE SITUATION HAD ACTION BEEN DELAYED

Given site conditions, the nature of the hazardous substances documented on site, and the potential exposure pathways to nearby populations described in sections II and III above, actual or threatened releases of hazardous substances from Clemente and the NFR site, if not addressed by implementing the response actions selected in this Action Memorandum, may have presented an imminent and substantial endangerment to public health, or welfare, or the environment.

VII. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Confidential Enforcement Addendum.

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be $51,146[1] with the breakdown as follows: $4,427 for Clemente and $46,719 for the residence.

VIII. RECOMMENDATION

This decision document represents the selected removal action for the Roberto Clemente High School Mercury Spill, and OU 1, North Fairfield Residence site, located in Chicago, Cook County, Illinois and developed in accordance with CERCLA, as amended by SARA, and not inconsistent with the NCP. This decision is based upon the Administrative Record for the site. Attachment 2 identifies the items that comprise the Administrative Record upon which the selection of the removal is based.

Because the conditions at the site meet the NCP § 300.415(b)(2) criteria for an emergency removal action, your approval of this request is recommended. The estimated total project costs are $ 41,620 of which up to $ 25,000 may be used for cleanup contractor costs. You may indicate your decision by signing below:

APPROVE: _____ DATE 1/31/03
Acting Branch Chief

DISAPPROVE: _____ DATE_____
Acting Branch Chief

[1]Direct Costs include direct extramural costs and intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgment interest, do not take into account other enforcement costs, including Department of Justice costs, and may be adjusted during the course of a removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

Confidential Enforcement Addendum

Attachments
1. Independent Government Estimate
2. Administrative Record Index
3. Environmental Justice Analysis

cc: Ray Worley, U.S. EPA, OERR, 5202-G
Michael Chezik, U. S. Department of Interior
Renee Cipriano, Director, Illinois Environmental Protection Agency
Steve Davis, Illinois Department of Natural Resources
Pete Badillo/Terry Sheahan, Chicago Department of the Environment
Joel McCullough, Chicago Department of Public Health

BCC PAGE

ROBERTO CLEMENTE HIGH SCHOOL MERCURY SITE
OU 1 NORTH FAIRFIELD RESIDENCE SITE
CHICAGO, COOK COUNTY, ILLINOIS

HAS BEEN REDACTED
(1 PAGE)

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ENFORCEMENT ADDENDUM
DECEMBER 2002

ROBERTO CLEMENTE MERCURY SPILL SITE
NORTH FAIRFIELD AVENUE RESIDENCE
CHICAGO, COOK COUNTY, ILLINOIS

ENFORCEMENT CONFIDENTIAL
NOT SUBJECT TO DISCOVERY

(REDACTED 1 PAGE)

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ATTACHMENT 1

INDEPENDENT GOVERNMENT ESTIMATE
NORTH FAIRFIELD RESIDENCE SITE
CHICAGO, ILLINOIS
DECEMBER 2002

HAS BEEN REDACTED
(1 PAGE)

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ATTACHMENT 2

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
ROBERTO CLEMENTE HIGH SCHOOL MERCURY SPILL
OU 1 NORTH FAIRFIELD RESIDENCE SITE
CHICAGO, COOK COUNTY, ILLINOIS

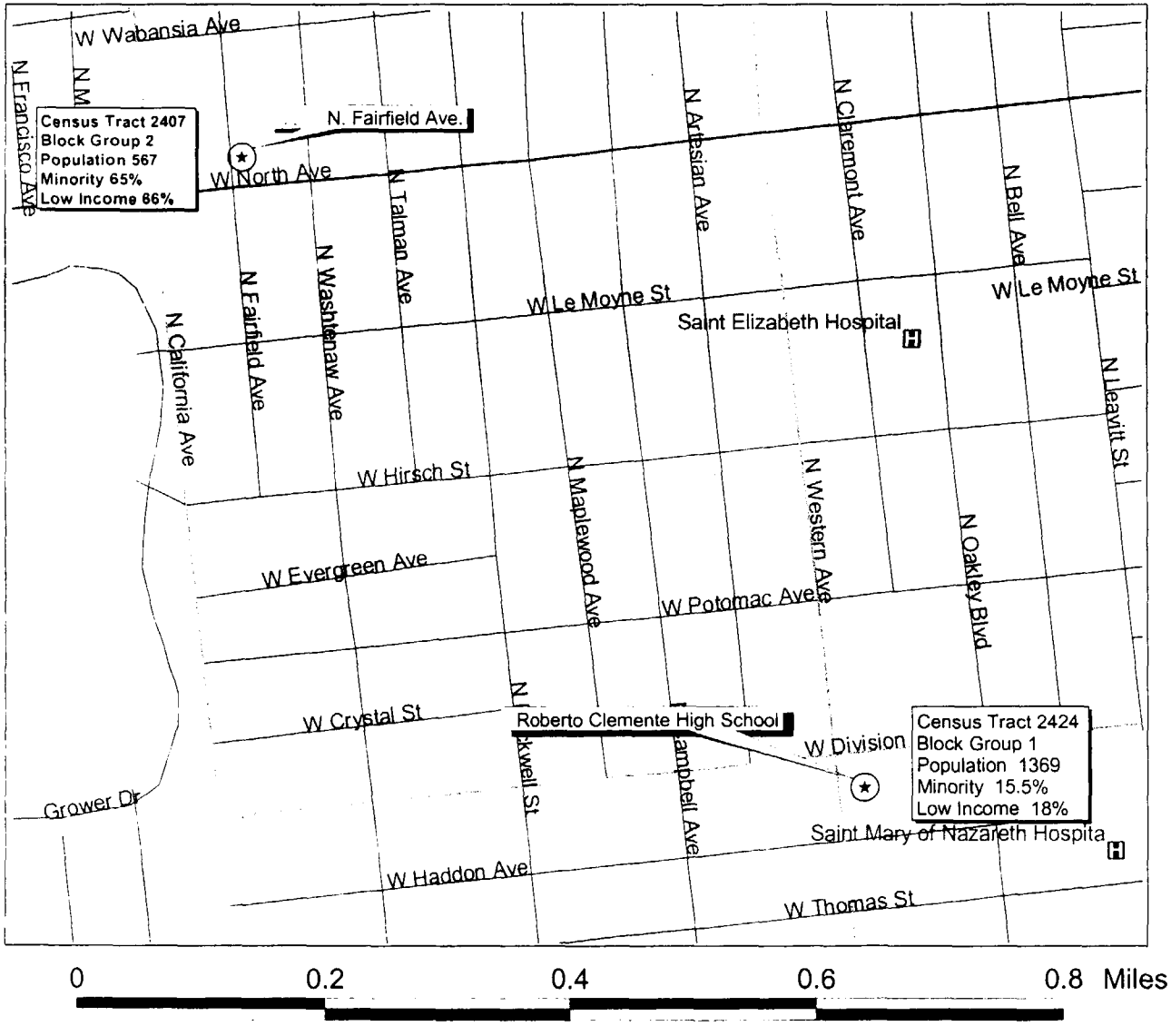
ORIGINAL
JANUARY 13, 2003

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	09/00/95	ATSDR	Public	ATSDR Fact Sheet re: Mercury (English/Spanish)	4
2	08/00/97	Office of Hispanic Affairs, City of Chicago	Public	Mercury Use in the Hispanic Community of Chicago	29
3	04/00/02	U.S. EPA	U.S. EPA	Superfund Response Actions: Temporary Re-locations Implementation Guidance	18
4	11/16/02	Simon, V., U.S. EPA	Distribution List	POLREP #1 for the Roberto Clemente Mercury Spill Site	3
5	11/21/02	Simon, V., U.S. EPA	Distribution List	POLREP #2 for the Roberto Clemente Mercury Spill Site	3
6	11/24/02	Orozco, D., Case Manager, B.A.S., C.O.T.A/L	Gutierrez, M.,	Letter re: Instructions Facilitating Return to Home	1
7	11/26/02	Simon, V., U.S. EPA	Distribution List	POLREP #3 (Final) for the Roberto Clemente Mercury Spill Site	1
8	12/04/02	Karl, R., U.S. EPA	Laureto, N., Law Dept. Chicago Public Schools	Letter re: Evaluation of Follow-up Urine Analyses at the Roberto Clemente High School	2
9	12/05/02	Simon, V., U.S. EPA	Gutierrez, M.,	Letter re: Mercury Test-ing w/English Translation and Attachments	7
10	12/05/02	Simon, V., U.S. EPA	Guerrero, P.,	Letter re: Review of Post Clean-up Sampling Results w/English Translation	4

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
11	00/00/00	Tetra Tech	U.S. EPA	Letter Report **(PENDING)**	
12	00/00/00	Simon, V., U.S. EPA	Karl, R., U.S. EPA	Action Memorandum: Request for an Emergency Removal Action at the Roberto Clemente High School Mercury Spill OU 1 North Fairfield Residence Site **(PENDING)**	

Region 5 Superfund EJ Analysis

Roberto Clemente High School Mercury Spill And OU 1, North Fairfield Residence Site



State of Illinois averages:
Minority 25%
Low Income 27%

U.S. EPA Region 5
Environmental Justice Case Criteria
for State of Illinois

Minority: 50% or greater

Low Income: 54% or greater

★ Site Location

Date of Map 1/16/03

Source of Map Census 2000 Database/ ArcView 3.0